blue mussels (*Mytilus edulis*) and barnacles (*Balanus balanoides*), the same diet, and same resort, as that of the Turnstone (*Arenaria interpres morinella*).— Arthur H. Norton, *Portland, Maine.*

Hybridism and Generic Characters in the Trochilidæ.— I am tempted to offer a few comments on Mr. Walter P. Taylor's interesting article in the July 'Auk,' not merely because the subject is one to which at the present time I am giving special attention, but because I believe there is much to be said against Mr. Taylor's view of the case. Before discussing the question of generic differences, however, I wish to correct an error (for which I seem to be responsible) concerning the type-locality of *Selasphorus floresii*. This is given as "Bolaños, State of Oaxaca," whereas it should read Bolaños, State of *Jalisco*; therefore, the supposed fifth specimen mentioned in the second paragraph on page 292 is the same example as that on which the supposed species was based. There is not the slightest doubt in my mind that this bird is a hybrid of *Selasphorus rufus* or *S. alleni* and *Calypte anna*, and it is not improbable that all four of the known specimens are of California origin, for I have an indistinct recollection of having somewhere read that some of Floresi's specimens were obtained in California and subsequently, through error, labeled Bolaños.[1]

Concerning generic distinctions it will simplify the matter very much to state that the question hinges entirely on what constitutes a genus in birds, and especially in the Trochilidæ. The generally accepted definition of a genus in zoölogy and botany is *a group of species which agree in the possession of certain characters not possessed by any other species or group of species.* In the various definitions of a genus which I have consulted in connection with this article,[2] it is nowhere implied that the differences must be exclusively morphological; the implication being that it is only necessary that a given group or set of species should share in certain obvious characteristics which separate them from any allied group. Every one knows that taxonomic groups, whether generic or of higher rank, are by no means of equal value in all classes of vertebrates (see footnote on page 6, 'Birds of North and Middle America,' Part I), and that birds, as a Class, are so very much more uniform in structure, and at the same time so much more numerous in species than the members of any other Class that, necessarily, a more minute subdivision is required, or, in other words, orders, families, genera, etc. (all super-specific groups), while arbitrarily equal in taxonomic rank are by no means (and cannot be) based on characters of equal anatomical importance. It is unfortunate that this fact is sometimes lost sight of, and that some would require for an avian genus

[1] If I am not mistaken in this impression, a similar case is that of several specimens in the National Museum collection received from Mr. John Xantus and labeled by him "Plains of Colima" which were undoubtedly obtained in California.

[2] See Agassiz, Essay on Classification, § 5, Standard Dictionary, Century Dictionary, etc.

more or less fundamental differences of structure. Moreover, the Trochilidæ bear to other birds much the same relation in this respect that birds in general bear to other classes of vertebrates, for no other family of birds is at the same time so numerous in species and so varied in the details of external structure, yet, notwithstanding the extraordinary range of variation among the more than five hundred species composing the family, so uniform in fundamental structural characters that no one has yet been able to satisfactorily divide it into groups of supergeneric rank. Usually there is little difficulty in segregating the Trochilidæ into generic groups, complying in all respects with the requirements of a genus according to the generally accepted definition; and certainly *Trochilus*, *Calypte*, and *Sclasphorus* are groups which can be defined, this being really the best test. *Trochilus* and *Calypte* both differ from *Selasphorus* in the forked instead of rounded or graduated tail, and in entire absence of rufous from the plumage, all the species of *Selasphorus* presenting, in both sexes, more or less of rufous in the plumage and the tail of reverse form from that of *Trochilus* and *Calypte*; while the two last named differ from one another in the exclusive possession by *Trochilus* of abruptly reduced inner (proximal) primaries, with a subterminal angular projection to the inner web, while the adult males have the pileum concolor with the back, the lateral feather of the "gorget" short, and the lateral rectrices pointed; those of *Calypte* having the pileum brilliantly metallic reddish purple or violet (like the "gorget"), the lateral feather of the gorget elongated, and the lateral rectrices rounded terminally and otherwise different in form. The very natural and well-circumscribed group of nine species constituting the genus *Selasphorus* contains no two species more closely allied than *S. rufus* and *S. alleni*, except two of the Costa Rican forms; hence, while everyone (including myself) will agree that it would "be as reasonable to put *S. alleni* in one genus and *S. rufus* in another, as to split up *Trochilus* [*i. e.*, the supergeneric group comprising *Trochilus*, *Calypte*, and *Selasphorus*] *on the basis of characters of no more weight than those separating these two species*," [1] I do not believe that anyone can be found who will claim that *S. alleni* and *S. rufus* are as distinct from one another as either of them is from species of *Trochilus* or *Calypte*.

What is known concerning hybrids among birds, instead of supporting Mr. Taylor's view that *Trochilus*, *Calypte*, and *Selasphorus* are not good genera indicates, if anything, exactly the contrary. In the first place, it may be fairly questioned whether hybrids are relatively more frequent among the Trochilidæ than in other families. Again, hybrids between congeneric species are, so far as I am aware, invariably fertile (*e. g.*, *Helminthophila pinus* + *H. chrysoptera*, *Colaptes auratus* + *C. cafer*, *Anas platyrhynchos* + *A. rubripes*, etc.[2]) while those between distinct genera are

[1] Italics mine.— R. R.

[2] The list might be considerably extended, but this would open the way for a controversy concerning specific characters!

not; consequently hybrids between distinct genera (even when as closely allied as *Trochilus, Calypte,* and *Selasphorus*) must necessarily be rare and sporadic.

Mr. Taylor's concluding observation that "Trochiline hybrids occur only between species whose ranges overlap or adjoin" necessarily applies with equal force to *all* hybrids, and therefore has no bearing on the case.— Robert Ridgway, *U. S. National Museum, Washington, D. C.*

RECENT LITERATURE.

Cory's 'The Birds of Illinois and Wisconsin.' [1]— In a portly volume of 764 pages the Curator of Zoölogy of the Field Museum has given us an illustrated manual of the Birds of Illinois and Wisconsin which for effectiveness of treatment will doubtless long remain without a rival. As stated by the author: "The present work includes, as far as known, all species and subspecies of birds which occur in Illinois and Wisconsin, the total number being 398, with descriptions of their various plumages, nests and eggs, and geographical distribution, together with more or less brief biographical notes concerning them." It is further said: "The keys to families and species are practically the same as those which first appeared in the author's Birds of Eastern North America, revised to meet present needs"; which means the omission of all species and higher groups not found in the area under consideration, and such other modifications as have been found necessary.

The preface is a brief statement of the scope of the work, an explanation of how to use the keys, and acknowledgments of indebtedness to the works of previous authors. Then follows the table of contents, a glossary of terms used in description (illustrated), an Introduction (pp. 13–22), describing and profusely illustrating types of structure of the wing, tail, leg and foot, and bill, and 'how to measure a bird.' Keys to the families and species occupy pages 23–274, and the systematic treatment of the species comprises pages 275–715. The work concludes with 'A Key to the Eggs of the more common birds known to breed in Northern Illinois and Southern Wisconsin' (pp. 716–739, with two half-tone plates of eggs), a Bibliography (pp. 740–750), and an Index.

In 1899, just ten years ago, appeared Mr. Cory's 'Key to the Birds of Eastern North America,' published, like the present volume, by the Field Museum. These Keys, as already stated, constitute the basis of the elabo-

[1] The Birds of Illinois and Wisconsin. By Charles B. Cory, Curator of Department of Zoölogy, Field Museum of Natural History. Publication 131. Zoölogical Series, Vol. IX. Chicago, U. S. A., 1909. 8vo, pp. 1–764, numerous text figures